

REMARKS

In the Office Action, claims 7-9 and 12-16 are rejected under 35 U.S.C. § 103. More specifically, claims 7-9 and 12-16 are rejected in view of U.S. Patent No. 5,731,098 ("*Suzuki*") and Japanese Patent Document No. JP 9-213337 ("*Koichiro*"); claims 7-9, 12 and 14-16 are rejected in view of *Koichiro* as evidenced by U.S. Patent No. 5,989,743 ("*Yamashita*"); and claim 13 is rejected in view of *Koichiro* and Japanese Patent Document No. JP 8-195201 ("*Abe*").

As previously discussed, claim 7 has been amended. The remaining pending claims depend from claim 7 and thus as a matter of law incorporate each of the features of same. Applicants believe that the claimed invention is patentable over the cited art, even if combinable. For example, nowhere does the cited art at least disclose or suggest a content of the mixture of the fluorine polymer and the aromatic vinyl-conjugate diene polymer in the binder that ranges from 10 weight percent to about 15 weight percent as required by the claimed invention.

For example, *Koichiro*, arguably at most discloses a binder weight percent of 8wt% as even admitted by the Patent Office. *Suzuki* purportedly discloses a binder content of 5wt%, yet this reference fails to disclose a binder for the negative electrode that includes a mixture of a fluorine polymer and an aromatic vinyl-conjugate diene polymer as claimed and as further admitted by the Patent Office. Further, *Yamashita* is merely relied on for its purported teachings regarding applying an active material on both sides of a current collector; and *Abe* is merely relied on for its purported teachings regarding carboxymethyl cellulose.

Indeed, Applicants have demonstrated that the claimed binder content provides beneficial effects with respect to the initial capacity and the short circuit temperature as illustrated in Table 2 on page 19 and further supported in the corresponding written text of the specification. At 10wt%, the highest initial capacity can be seen while the short circuit temperature was not excessively high as compared to the other test battery in Table 2. At 15 wt%, the initial capacity was greater than 1300 mAh, yet a lower short circuit temperature was maintained. This suggests that the claimed binder content from 10 wt% to about 15wt% can result in a desirable balance between achieving a high energy density level while maintaining a short circuit temperature that is not excessively high. Thus, the type of negative electrode binder and content thereof as

required by the claimed invention clearly falls outside of what is allegedly disclosed and, moreover suggested, by the cited art.

Further, nowhere does the cited art disclose or suggest the additional features as required by at least some of the dependent claims. For example, claims 17 and 18 have been newly added to further define the weight ratio of the fluorine polymer to the aromatic vinyl-conjugate diene as fully supported in the specification, for example, on page 19 in Table 2. Nowhere does the cited art, even if combinable, disclose or suggest the binder content features let alone in combination with the fluorine polymer and aromatic vinyl-conjugate diene weight ratio features as further required by claims 17 and 18.

Based on at least these reasons, Applicants believe that the cited art is deficient with respect to at least a number of features of the claimed invention. Therefore, Applicants respectfully submit that the cited art, even if combinable, fails to render obvious the claimed invention.


Accordingly, Applicants respectfully request that the obviousness rejections be withdrawn.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of the claims.

Respectfully submitted,

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